Considering patterns in class interactions prediction

Abstract:

Impact analysis has been defined as an activity of assessing the potential consequences of making a set of changes to software artifacts. Several approaches have been developed including performing impact analysis on a reflected model of class interactions analysis using class interactions prediction. One of the important elements in developing the reflected model is a consideration of any design pattern that the software employs. In this paper we propose a new class interactions prediction approach that includes a basic pattern analysis i.e., Boundary-Controller-Entity (BCE) pattern in its prediction process. To demonstrate the importance of the pattern consideration in the prediction process, a comparison between the new approach (with pattern consideration) and two selected current approaches (without pattern consideration) were conducted. The contributions of the paper are two-fold: (1) a new class interactions prediction approach; and (2) evaluation results show the new approach gives better accuracy of class interactions prediction than the selected current approaches.